

Abstract Submitted
for the DFD06 Meeting of
The American Physical Society

Sorting Category: 42. (T)

Reciprocal motion at low Reynolds numbers ERIC LAUGA, RENAUD TROUILLOUD, TONY YU, ANETTE HOSOI, MIT — At low Reynolds numbers, the equations of motion are time-reversible. Consequently, if the periodic motion of a solid body is symmetric in time (so called reciprocal motion), the body - on average - will not move. One way to overcome this constraint is to use non-reciprocal motion, as do the flagella of swimming microorganisms. Another way is to allow the body to be flexible. In this talk, we will discuss a third possibility: the reciprocal motion of a solid body can lead to net motion if the surrounding environment is able to deform in response to the motion of the body. We will present simple scalings and a macro-scale experiment to support this idea.

- Prefer Oral Session
 Prefer Poster Session

Eric Lauga
lauga@mit.edu
MIT

Date submitted: 02 Aug 2006

Electronic form version 1.4